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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/788,729	02/26/2004	Sumantra Chakravarty	030061 /QUALP825US	6099
70797 7590 07/11/2011 TUROCY & WATSON, LLP 127 Public Square 57th Floor, Key Tower Cleveland, OH 44114			EXAMINER MURPHY, RHONDA L	
			ART UNIT 2462	PAPER NUMBER
			NOTIFICATION DATE 07/11/2011	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/788,729	CHAKRAVARTY ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	RHONDA MURPHY	2462	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 April 2011.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3,7,8,13,15,17,18,20-23,25,26 and 29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,7,8,13,15,17,18,20-23,25,26 and 29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. This office action is responsive to the communication filed on 4/25/11. Accordingly, claims 4-6, 9-12, 14, 16, 19, 24, 27, 28 and 30 have been canceled and claims 1-3, 7, 8, 13, 15, 17, 18, 20-23, 25, 26 and 29 are pending.

### ***Response to Arguments***

1. Applicant's arguments filed 4/25/11 have been fully considered but they are not persuasive. Applicants argue "Yoshida fails to teach or suggest encoding the first data with the long code at the first transmission terminal comprises utilizing an identical long code also employed by a second transmission terminal transmitting signals having an opposite polarization to the first polarization as recited in independent claim 1."

However, Examiner respectfully disagrees. Although Shattil teaches encoding first data and second data with a code (*each of the code symbols provided to the transmitters: col. 49, lines 57-59*), Shattil fails to explicitly disclose the code as the same **long** code. Yoshida is relied upon to disclose encoding first data and second data with the same **long** code, which is taught in column 9, lines 2-5 and illustrated in Figure 4. The same elongated spreading code is input for both the I and Q signals (representing the first and second data).

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-3, 7, 8, 13, 15, 17, 18, 20—23, 25, 26 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shattil (US 7,593,449) and Yoshida et al. (US 5,734,647).

**Regarding claims 1, 15, 18 and 21**, Shattil teaches a method for reducing cross-polarization interference in a wireless communication system (*Fig. 16*), comprising: generating first data to be transmitted from a first transmission terminal (*col. 22, lines 51-58; further described in col. 44, lines 18-20; multiple transmitters*); encoding the first data with a code at the first terminal to produce a first long encoded signal (*col. 49, lines 57-59: each code symbol may be provided to each of a plurality of transmitters*); applying a first polarization to the first encoded signal to produce a first encoded, polarized signal (*col. 49, lines 60-63*); and transmitting the first encoded, polarized signal from the first transmission terminal to at least one destination (*col. 30, lines 52-*

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57), wherein the encoding the first data with the code at the first transmission terminal comprises utilizing an identical code also employed by a second transmission terminal transmitting signals having an opposite polarization to the first polarization (*col. 49, lines 57-59: each code symbol may be provided to each of a plurality of transmitters; col. 44, lines 18-20: transmitters with different polarizations*). Shattil further teaches a computer readable storage medium executing the above method in col. 102, lines 35-40.

Although Shattil teaches encoding first data and second data with a code (*each of the code symbols provided to the transmitters: col. 49, lines 57-59*), Shattil fails to explicitly disclose the code as the same **long** code.

However, Yoshida teaches encoding first data and second data with the same long code (*col. 9, lines 2-5: the same elongated spreading code is input for both the I and Q signals - see Fig. 4*).

In view of this, it would have been obvious to one skilled in the art at the time the invention was made, to modify Shattil's method by incorporating the teachings of Yoshida, for the purpose of providing a longer code length for reducing signal interference.

**Regarding claims 2 and 22**, Shattil and Yoshida teach the method of Claim 1. Shattil further teaches orthogonalizing the first data transmitted by the first transmission terminal with respect to second data transmitted by the second transmission terminal (*col. 44, lines 18-28*).

**Regarding claims 3 and 23**, Shattil and Yoshida teach the method of Claim 2, wherein Shattil further teaches the orthogonalizing further comprises: applying a first spreading

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code to the first data originating from the first transmission terminal, to generate a first spread signal, wherein the first spreading code is distinct from a second spreading code utilized by the second transmission terminal to generate a second spread signal from the second data (col. 44, lines 18-34; Walsh codes).

**Regarding claims 7 and 25**, Shattil and Yoshida teach the communication method including the transmission method of Claim 3. Shattil further teaches wherein the applying the first spreading code further comprises applying a first Walsh code, assigned to the first transmission terminal, to generate the first spread signal, wherein the first Walsh code is distinct from a second Walsh code assigned to the second transmission terminal (col. 44, lines 18-34; further described in col. 59, lines 4-9: Walsh codes).

**Regarding claims 8, 13, 17, 20 and 26**, Shattil teaches a method, comprising: receiving a signal, via an antenna (*col. 30, lines 52-57*); dividing the signal received into a first signal (*col. 22, lines 17-19; further described in col. 47, lines 19-25*), transmitted from a first transmission terminal, and a second signal, transmitted from a second transmission terminal, wherein the first signal and the second signal have opposite polarizations with respect to one another (*col. 22, lines 51-58; further described in col. 44, lines 18-20; transmitters with different polarizations*); applying an identical code to the first signal and the second signal to generate a first decoded signal and a second decoded signal, respectfully (*col. 47, lines 19-26*); applying a first orthogonal code to the first decoded signal to produce a first output signal corresponding to the first signal transmitted from the first transmission terminal (*col. 50, lines 44-50*); and applying a

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second orthogonal code to the second decoded signal to produce a second output signal corresponding to the second signal transmitted from the second transmission terminal (*col. 50, lines 44-50*). Shattil further teaches a computer readable storage medium executing the above method in *col. 102, lines 35-40*.

Although Shattil teaches encoding first data and second data with a code (*each of the code symbols provided to the transmitters: col. 49, lines 57-59*), Shattil fails to explicitly disclose the code as the same **long** code.

However, Yoshida teaches encoding first data and second data with the same long code (*col. 9, lines 2-5: the same elongated spreading code is input for both the I and Q signals - see Fig. 4*).

In view of this, it would have been obvious to one skilled in the art at the time the invention was made, to modify Shattil's method by incorporating the teachings of Yoshida, for the purpose of providing a longer code length for reducing signal interference.

**Regarding claim 29**, Shattil and Yoshida teach the receiver system of claim 26, wherein Shattil further teaches means for generating a first in-phase signal component and a first quadrature signal component of the first signal (*col. 46, lines 47-48*); and means for performing respective pulse shaping operations on the first in-phase signal component and the first quadrature signal component (*col. 46, lines 52-59*).

***Conclusion***

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RHONDA MURPHY whose telephone number is (571)272-3185. The examiner can normally be reached on Monday - Friday 9:00 - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for



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published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Seema S. Rao/  
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